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ABSTRACT

As part of a study of educational innovation in information and communication technology (ICT) disciplines, 83 academics from relevant departments across Australia participated in mini-conferences where they identified and discussed the factors driving and inhibiting educational initiatives. Participants repeatedly noted the push for flexible delivery as a factor driving educational innovation. This paper explores participants' views on this push. Issues discussed include the direction in which academics perceive the push is pushing and academics' concerns about motivations behind the push, changing work practices and the disintegration of teaching, and implications for workload. (Contains 17 references.) (Author/MES)

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ACADEMICS' CONCERNS ABOUT "THE PUSH FOR FLEXIBLE DELIVERY"

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Abstract

As part of a study of educational innovation in information and communication technology (ICT) disciplines, 83 academics from relevant departments across Australia participated in mini-conferences where they identified and discussed the factors driving and inhibiting educational initiatives. Participants repeatedly noted "the push for flexible delivery" as a factor driving educational innovation. This paper explores participants' views on this "push". Issues discussed include the direction in which academics perceive the "push" is pushing and academics' concerns about motivations behind the "push", changing work practices and implications for workload.

Keywords

flexible delivery, ICT education, academic work practices, academic workload

Introduction

The ICT-Ed Project

The Computing Education Research Group in the Faculty of Information Technology at Monash University is investigating the ways in which issues of teaching and learning have been approached within Information and Communications Technology (ICT) discipline areas in Australian universities. The project takes a three-pronged approach to issues of teaching and learning, with data collection phases that focus variously on the views of educators, employers and students. The first phase, focusing on the views of ICT educators, was completed in June 2001. This paper describes and discusses a sub-set of the many issues raised by ICT educators during this phase, in particular, those issues surrounding moves towards the flexible delivery of university subjects. As an introduction to the issues explored, an outline of the broader context of university education is given.

Higher Education in Australia

Over the last 15 years, Australia's universities, as with those in most countries, have been subject to extensive and multi-facetted change. These changes have resulted from a number of forces, including the advent of mass education (Coaldrake, 2000; Shattock, 2001) and, related to this, an increasing government focus on vocational education and the role of higher education in the national economy. These forces have manifest in a changing policy environment for the funding and governance of higher education (eg., Dawkins, 1989; Hoare, 1995; Vanstone, 1996; West, 1998), including an increasing need for institutions to compete for funding and for students and, therefore, to be more market-oriented.

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Another element in the changing context of higher education is the advance and convergence of information and communication technologies and increasing globalisation (Cunningham, Tapsall, Ryan, Stedman, Bagdon & Flew, 1997). The convergence of ICT and subsequent increased accessibility, and uptake, of new electronic technologies has facilitated dramatic changes in the way many people work. Universities have embraced new electronic ICT as the source of solutions to many of the problems arising from the other rapid changes that have affected them.

In terms of teaching and learning, technology has been seen as a solution to the problems associated with increasing student numbers and the demand for increasingly flexible provision of education to an increasingly diverse student body (Coaldrake, 2000; Holt & Thompson, 1995). Information and communication technologies are also seen as a means of attracting and servicing new educational markets, both in Australia and internationally. Describing what they refer to as "the technological imperative", Holt and Thompson (1995) wrote:

> All tertiary institutions - whether they see themselves as being open and distance education institutions or not - are grappling with the challenge of information technology in relation to the very core of the academic enterprise: teaching and learning; research and scholarship. (p. 47)

These contextual factors help to explain, at least in part, many of the views expressed by the academics who participated in the study reported here.

Methodology

Mini-conference Program

The data reported here were collected using a *mini-conference* format. This format was devised to facilitate open discussion of issues perceived by participants to be relevant to ICT education. The mini-conferences ran from 10am to 4pm on designated days in each capital city. Two mini-conferences were held in Melbourne and in Sydney. One mini-conference was held in each of Hobart, Brisbane, Adelaide, Perth and Canberra. A video-link was used to conduct an abridged version of the mini-conference with educators in the Northern Territory. Numbers participating in each mini-conference ranged from four to fourteen. Small numbers allowed for discussion and for each participant to give a short presentation on a teaching and learning initiative currently being undertaken. Two researchers directed the proceedings.

Workbooks were provided to each participant on their arrival at a mini-conference. The workbooks provided a structure for the mini-conferences and provided participants with space to make notes in preparation for their contributions to discussions and presentation. They also served as a data source. The workbooks contained a description of the study, an informed consent form, space for participants to make notes and five stimuli items:

1. What are the factors driving educational initiatives in ICT education?
2. What are the factors inhibiting educational initiatives in ICT education?
3. Please describe a teaching and learning initiative in which you or your department are currently involved. (included sub-prompts)
4. Deciding whether your teaching initiative is effective. (included sub-prompts)
5. What issues would be involved in disseminating your initiative to other ICT educators?

Questions 1, 2 and 5 were used to stimulate discussion among participants. For each question, participants were given five minutes to think and make notes about the question before they were prompted to discuss the factors/issues involved. Discussions were 25 minutes long. As factors were raised and discussed, one of the researchers recorded them on a whiteboard; this involved some negotiation between participants. At times, the researchers asked for issues to be clarified or for examples to be given. All discussions were audio-taped and transcribed. The data presented here is taken primarily from audio transcriptions of discussions in response to questions 1 and 2. At times, participants returned to previously discussed topics, so some comments pertaining to factors driving and inhibiting educational initiatives were given as part of discussions of question 5.

Participants

To recruit ICT educators to the mini-conference program, invitations were sent to all heads of Australian university departments, schools and divisions where ICT-related courses are offered. These included departments of information systems, software engineering and computer science, for example. Department heads were encouraged to circulate invitations to their staff members. In total 83 ICT educators from 51 administrative units (46 departments/schools, 1 faculty, 4 university level education units) in 29 universities (27 public, 2 private) participated in the mini-conference program. Participants included staff members from a range of academic levels, including all levels of lecturer, department heads, professors, associate and faculty deans, one pro-vice chancellor and a small number of instructional designers.

Participants can be described as a group of ICT educators who are specifically interested in teaching and learning. The invitation to participate described the target group as staff members who are involved in teaching and learning initiatives that aim to improve ICT education. Participants self-selected into the study knowing that it focused on teaching and learning. The nature of participants' contributions indicated that they were not only interested in teaching and learning, but were enthusiastic about and committed to improving teaching and learning in their disciplines. When informally asked why they attended, participants generally gave reasons such as, "to find out what other people were doing." When asked what they had gained from participating, two benefits were frequently given: an opportunity to hear about what was going on in other institutions and an opportunity to reflect on and receive feedback about their own practice.

One qualification, or limitation, that should be acknowledged here is the failure in the reporting of data below to distinguish between the views of participants who have different roles in their departments. For example, no attempt has been made to distinguish between the views of mangers (eg. heads of schools) and those of lecturers. This is in part due to the type of data collected and the way it has been managed. Audio recordings were treated as focus group recordings: they were transcribed without identification of particular speakers. In this way, the position of speakers is difficult to determine. All participants were recruited in their capacity as ICT educators, rather than as representatives of their particular positions, and lecturers formed the majority of participants. It is evident from the content of discussions that they were skewed towards the concerns of teachers rather than those of managers.

Analysis of Data

A coding process was used to reduce the data collected. To begin with, a data-up, rather than theory-down, approach was taken to the analysis. For questions 1, 2 and 5, notes made in participants' workbooks and whiteboard records of discussions were coded into a large number of descriptive categories. These categories were then grouped, reducing the data further. They were then tested against transcriptions of audio-recordings of discussions, using the constant comparative method (Silverman, 2000; Strauss & Corbin, 1997). As data were compared categories were merged and revised. The resulting small number of categories allowed for the complexity of particular issues/factors to be captured in each category and examined. Particularly rich excerpts were coded into multiple categories. To increase the reliability of this coding process, a co-researcher inspected reports of each code for consistency.

The coding process, the resulting categories and the limitations to the study have been reported in more detail elsewhere (Collins & Lynch, in press; Lynch & Collins, in press).

Participants' Views

Phrases such as "the push for flexible delivery" were repeatedly noted in response to open-ended questions about factors driving and inhibiting innovation in ICT education. This phrase was used to label a major factor seen by participants as driving and inhibiting educational innovation. Other factors included individual initiative, the changing scale of teaching, the changing student population, the development of new content, the availability of new tools, support from

management and student demand. These other factors have been described elsewhere (Lynch & Collins, in press). This paper is concerned only with those issues raised by participants that concerned "the push for flexible delivery".

An exploration of all references in the audio transcripts to flexible delivery revealed a web of interrelated concerns. At each mini-conference, participants expressed concerns about the motivation behind the "push" and about problems they saw resulting from the push, for example, those relating to work practices, workload, student access, equity and quality. Due to space constraints, only three areas of concern are described here: perceptions regarding the motivations behind the "push", staff work practices and staff workload. They are described below with reference to illustrative data excerpts and relevant literature.

A qualification should be made about the discussion that follows. *The push* is used throughout this paper as though there is a unified push towards particular types of teaching and learning practices. This is misleading because the pressures exerted on academics are not unified; they come from a range of sources. Participants worked in a 51 administrative units in 29 universities and, although many university administrators respond to the same pressures and policy environment, responses to this environment manifest in many different ways. However, as was seen at the mini-conferences, academics from different institutions can sensibly discuss "the push" and report common experiences and concerns.

Before describing the concerns discussed by mini-conference participants, we look at what participants meant by the term *flexible delivery*.

What was Meant by "Flexible Delivery"?

The push for flexibility refers to pressure to implement particular modes of teaching rather than the opportunities seen arising from the availability of new technologies. Participants were not asked to come up with an agreed meaning of the term *flexible delivery*. Discussions of terminology were rare in the mini-conferences. Instead, participants at each mini-conference identified "the push for flexible delivery" as a factor driving and/or inhibiting educational innovation. That such a push existed was not disputed within mini-conference discussions. Participants generally used terms such as *flexible delivery*, *flexible learning* and *online learning* in discussions of the push without distinguishing between them and, apparently, without needing to explain to their peers what the terms denoted. These terms were used interchangeably to refer to the use of Internet-based information and communication technologies in teaching.

Flexible delivery and similar terms were associated more strongly with the use of particular technologies, than with an aim to offer flexibility. In many discussions, *flexible delivery* was synonymous with web-based delivery. Participants repeatedly reported that they had been encouraged by management to "put it on the Web". Although a small number of participants described particular initiatives that focused on student-teacher and student-student interaction, general discussions about the push for flexible delivery suggested that participants experienced pressure for more information-focused initiatives, that is, pressure to create materials that could be used to transmit course content to students. In this way, the term *flexible delivery* was aligned with traditional distance education approaches, focusing on the production of materials to facilitate time/space independent learning.

The way participants used the term *flexible* does not reflect discussions in educational literature on open learning, student-centred teaching or constructivist learning environments (for example, see discussions in Lefoe, 1998; Oliver, 2000), nor does it reflect participants' ideas about best practice or their aspirations to be good teachers. Rather, it reflects the messages that participants have been receiving about the direction that their teaching should take, messages about the desires of their managers, and messages about the desired outcomes of government policy.

Participants' association of the push for flexible delivery with information-focused approaches to delivering course material may explain some of the concerns about this push that are described below and the general negativity towards the push that was expressed by participants. Taylor,

Lopez and Quadrelli (1996) found that a key barrier to academics' involvement in the use of ICT to provide more flexible modes of delivery "lies in the assumed association of flexible modes of delivery with more traditional distance education practices" (p. xii). Similarly, Willmot and McLean (1994) found that teachers were wary of a "learning package" approach and advocated approaches that emphasised the importance and possibilities for human interaction. Many of the concerns described below can be better understood when seen in the context of the directions in which participants perceive "the push for flexible delivery" to be pushing.

Sources of the "Push"

The most commonly discussed source of the push for flexible delivery was top-down directives, that is, directives or expectations from government, university and/or departmental levels. Participants were often critical of, or even cynical about, these directives because they were suspicious of the motivations behind them. There was a general perception that educational motivations were not a primary consideration in the push. Very few participants discussed the push for flexible delivery in terms of educational value. Many discussions positioned the push as a government, university or departmental response to a problem or need. Problems or needs discussed included students' need for flexible (time/space independent) access and universities' need to find new markets and to cut costs. Typical comments about the needs or problems to which flexible delivery might be the solution are given in Table 1. These three areas of need are interrelated. Flexible delivery was seen by participants as being promoted as the means by which universities can satisfy students' needs, access new markets and cut costs.

Need or Problem	Data excerpt
Students' need for flexible access	I guess people who are working full time who want to study you know any time of day or night or people that are isolated or people who are at home with young children that anyone, people that have retired who feel as though they need, retired managers who think they need to know about computers, they must do a computer course via the Internet.
University/ department need for new markets	There is a tremendous influx in Australian universities. They've got more and more coming, of overseas students as on-shore students as well as to establish off-shore programs. That actually leads to certain necessities as to online teach, in terms of delivery, including distance education which actually becomes part of the whole initiative of you know, establishing an overseas off-shore forum basically.
University/ department need to cut costs	I was going to identify a similar thing at the school over lower funding in recent years; certainly at our school we've been encouraged to work smarter not harder. You've now got two subjects to teach per semester instead of one. Again it comes back to a financial pressure: we don't have the resources or the people or the academics to give students individual attention. So we have to use the technology because we just don't have the people power to do it.

Table 1: Needs or problems as a source of the push

Educators' criticisms of non-educational reasons for promoting flexible delivery have been reported by Willmot and McLean (1994) who noted,

> The thread that runs through teachers' discussion about flexible learning is suspicion that it is being promoted for non-educational reasons. Several teachers felt that flexible learning is an educational justification for an economic measure. ... Teachers are anxious that management's priority of cost-effectiveness will mean that flexible learning is interpreted in ways that are not educationally desirable. (p. 102-103)

Participants' perceptions of the primacy of these non-educational motivations behind the push for flexible delivery do not bode well for the success of the push. Taylor, Lopez and Quadrelli (1996) recommended that, managers "advocate the value of technology in the service of educational ends"

(p. xiv-xv), arguing that "the issue of learning must become the central concern of academics and those who seek to influence their practices" (p. xiii).

Not only did participants see the motivations behind the push for flexible delivery to be primarily non-educational. They also believed that university administrators held narrow views about what constituted flexible delivery, as well as misconceptions about the costs and benefits of flexible delivery. The following excerpts are typical of comments about top-down expectations or directives for teaching staff to move towards the flexible delivery of subjects.

> At the high levels I think their beliefs are not necessarily founded on research about costs and about learning and about the quality of learning.

> You got to admit, I mean half the people in management they just, you know, every, "you can do anything on the Web now; we must have it on the Web."

> Participant one: Now separately but aligned with this question about not understanding what is possible this almost totally entrenched belief in some people that you can do absolutely anything on the World-Wide Web; if there's a problem all you have to do is put it on the Web and it will be solved.
> Participant two: Internet boosting
> Participant one: Yeah Internet hype.

Despite the large number of technology enthusiasts that participated in the mini-conferences, only a small number discussed flexible delivery in positive terms. When it was framed positively, participants were discussing the development of enabling technologies generally, rather than their specific application to flexible delivery, or they were discussing their own initiatives that made use of the potential of electronic ICT to enhance interaction, rather than the perceived push towards the electronic transmission of information. Participants' concerns about flexible delivery make sense when account is taken of their impressions of the types of activities that they saw as being promoted and supported, that is, information-focused, web-based delivery of course materials.

Work Practices and the Disintegration of Teaching

Participants described what they saw as an increasing trend towards the "disintegration" of teaching, that is, the de-integration of the production of subject materials and the delivery of subjects. Participants considered that there was more to teaching than the sum of its parts, expressing concern about the future of their roles as teachers. Linked to this concern were perceived threats to academic freedom and other issues related to a *packaging* approach to subjects. In the following data excerpt, one participant explains the trend in the production and dissemination of formal course materials and the motivations he sees behind this trend.

> So like if you think of the old-fashioned way that you have a set of notes which were yours and made sense to you, then we can't afford to have any more of that. So how does the head of school get that unit visible? Ask it to be put into PowerPoint or into Word, so that it's mounted on the Web, not under the guise of innovation and teaching, but so it's there, accessible for the next person. ... So there's got to be a lot of visibility there, a lot of extra things, because you don't know who's going to teach a particular unit.

Participants were generally uncomfortable with the idea of producing materials that others would deliver. One participant explained with some disbelief that, "At one point it looked like I was going to be lecturer-in-charge without teaching it at all". Conversely, similar discomfort was expressed at the idea of teaching with materials produced by someone else. Participants found it difficult to articulate why this was undesirable, with many referring broadly to teaching as a personal activity.

> Teaching is a very personalised activity and its highly individualistic ... I just think it's a very personalised activity – well it is at the moment; I take [another participant's] point about the de-layering or the disintegration of teaching that's occurring – but traditional teaching is in the

> sense that the academic both creates the curriculum, researches it, creates the learning materials and teaches it, and it's seen as an integrated whole. And it's only when, for example, you're given other peoples' lecture notes to try to teach from, I just can't do it. It is amazingly hard, you know, when occasionally you've been asked to teach a course and "it's all there", but you can't – you haven't worked your way through it. I really am not quite sure why, but I would find it impossible to teach that way. Having said that, increasingly it's a model that is being used in higher education, where people – private providers in the US are given material. Not only do they have to teach it, but they're not allowed to change it. They have to teach it as given. I could not teach that way.

Koppi, Chaloupka, Llewellyn, Cheney, Clark and Fenton-Kerr (1998) explained this phenomenon in terms of academic culture:

> Tertiary teachers are generally creative individuals and experts in a particular field. They are generally also critical thinkers and maintain an objective distance from the work of their peers. This combination inclines the teacher to design unique courses commensurate with personal experience and knowledge. In Australia in particular, this personal course development is accepted practice to the extent that cross-institutional formal evaluation and comparison of courses does not generally occur. An academic will not normally adopt another academic's course without personalising it. A key feature of academic culture is idiosyncrasy that is ardently defended under the rights of academic freedom. (p. 425).

Similarly, Taylor et al. (1996) found that,

> academics feel threatened and are reluctant to teach from packages because this requires that they teach other people's work – 'a very unrewarding teaching experience'. Reasons include: a perceived lack of skill to teach what somebody else has designed; differing viewpoints on course content; and loss of their authority as author. (p. 56).

As well as the reported difficulty in teaching from other people's materials, participants expressed concerns about the lack of control they anticipated having over their material once it had been subject to standardisation and packaging by the growing number of university level learning resource units. As one participant explained,

> Participant: I've got one more inhibiting factor: in terms of the university policy towards initiatives, in many cases there's a removal of control from the academics. Like at [my university] we have [a learning resources unit] which, from the university's perspective, are responsible for the flexible delivery, but what happens is that academics end up working for them rather, rather than them working for us, so that we're the providers.
> Moderator: You're the content provider?
> Participant: Yeah.
> Moderator: And they wrap it up?
> Participant: And they wrap it up and in many cases they wrap it up in a non-innovative way.
> Moderator: So how would you – ?
> Participant: Well I think I would just describe it as a removal of control if you like.

In his discussion of changes in academic work, Coaldrake (2000) explained that staffing policies are shifting from local control and individual autonomy to a more collective and institutional focus. This is inconsistent with the conventional ideals of academic work that extol academic freedom. Taylor et al. (1996) advised that, to support the move towards more flexible practices, institutions should "[assure] academics that they will continue to be able to exercise significant levels of personal control over their teaching practices" (p. 60).

Contrary to this recommendation, many participants reported trends towards the separation of the production of materials from their delivery. Participants were concerned that they would lose ownership over material and lose control over its delivery. They saw the delivery as integral to the aims they had for material. The reported trend towards the de-integration of teaching activities can

be linked back to participants' perceptions that the push for flexible learning is focused on the provision of information.

Workload

Participants expressed concerns about their workloads that relate specifically to their impression of the type of flexible delivery that was expected of them, and the effects of an information-based approach to course delivery on their work practices. The approach implied by discussions of the push for flexible delivery is consistent with what Caladine referred to as an *industrial model* of education (cited in Taylor et al., 1996). This approach is described as having "high fixed costs involved in producing the teaching/learning resources" (Taylor et al., 1996). Participants were concerned that these costs would be absorbed into their already heavy workloads. They were particularly concerned because of the rapid development of content in their discipline areas and the resulting need to frequently up-date materials. The following data excerpts are typical of participants' comments on the work required to produce and update materials.

> When you try it you find that it adds to your workload. It doesn't replace the workload. ... In the old days I might have my own notes and maybe some tutor notes and then we had student notes that we printed, and now we have our own notes, the supporting lecturer notes, student notes, student notes that are printed and they're also on the electronic form, and now we have a ripple for every time anything changes: you've got to change all those. Even if you say, "Now we're going to do this activity", you have to change, the content also changes, so you've got five or six things every time you change you have to change because you're doing all this extra supporting.

> There isn't really an electronic system that allows us to support our range of materials so that if we suddenly decide that we're going to teach something differently about a particular point, there's nothing that says, "ping, you have to change quiz three, question four", or "you have to change tutorial question 6, notes for this ...".

Again, the extra work described by participants was consistent with a focus on the transmission of information. Constant up-dating of materials was seen as necessary if materials were to reflect the latest developments in subject areas and to meet students' demands to learn the latest programming languages and the latest software packages. University level learning resource units were not seen to be flexible enough to facilitate the frequency of up-dating required.

Conclusion

The discussions of the move towards flexible delivery recorded at the mini-conferences suggest that ICT educators are experiencing pressures to implement delivery modes that are modelled on traditional distance education approaches. This trend is seen as a response to non-educational aims and flies in the face of educational literature that recommends more open, student-centred approaches to learning and that focus on the potential of new electronic ICT to facilitate enhanced interactions between students and between students and teachers.

Participants in the mini-conferences expressed concerns about the direction in which "the push for flexible delivery" is pushing. In particular, they were concerned about the separation of tasks that they see as integral to teaching and to being a teacher. They were concerned about their future roles, changing work practices and increasing workloads.

However, these concerns and criticisms surrounding "the push" can be contrasted to the actual practices that participants reported being involved in. Many, in their criticism of the push, alluded to their own teaching and learning initiatives, which focused on interaction and student learning. As one participant put it, "the wrong reason with the right outcome". Despite pressures to move towards teaching practices that focus on the delivery of information and to implement very limited versions of *flexible delivery*, ICT educators are questioning and resisting this pressure, and are implementing teaching and learning initiatives that are motivated by educational aims.

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